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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,310	12/28/2001	Giuseppe Marchionni	108910-00047	2890
4372	7590	04/20/2004	EXAMINER	
ARENT FOX KINTNER PLOTKIN & KAHN 1050 CONNECTICUT AVENUE, N.W. SUITE 400 WASHINGTON, DC 20036			MERCADO, JULIAN A	
			ART UNIT	PAPER NUMBER
			1745	
DATE MAILED: 04/20/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/028,310	Applicant(s) MARCHIONNI ET AL.	
	Examiner Julian Mercado	Art Unit 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 3-7 is/are allowed.
- 6) ☐ Claim(s) 1,2 and 8-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2-13-02</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Objections

Claim 5 is objected to because of the following informalities:

- a. In claim 5 at line 6, it is suggested to change "ehylencarbonate" to --ethylene carbonate--.

Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 15 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Art Unit: 1745

Claims 7 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites the limitation "the concentration of conductive salt" in line 2. There is insufficient antecedent basis for this limitation in the claim. It is suggested to amend this claim so as to depend from dependent claim 3.

Claim 15 provides for the use of the electrolytic composition, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 17 is rejected under 35 U.S.C. 102(e) as being anticipated by Marchionni et al.

(U.S. Pat. 6,403,539 B1)

At the outset, the examiner notes that while dependent claim 17 depends on independent claim 1, the preamble recitation of "Perfluoropolyether additives" does not requisitely

Art Unit: 1745

incorporate the "Electrolytic compositions" feature of independent claim 1. That is, dependent claim 17 is interpreted to only call for the perfluoroether additive as recited in independent claim 1. Additionally, the claimed average molecular weight range has been given its broadest interpretation insofar as the preferable range of 1,000 to 50,000 is not required by the scope of the claim. That is, for purposes of claim interpretation, the claimed molecular weight range is read as being from 500 to 5×10^5 .

Regarding claim 17, the '539 Patent teaches the instant formula (I) with d, e, and f being integers, with the units being statistically distributed along the chain within the claimed average molecular weight, with T being an end group such as $-\text{CF}_2\text{X}$ ($\text{X} = \text{F}, \text{CF}_3, \text{Cl}$), *inter alia*, with M being an ionic form, e.g. Na^+ , *inter alia*, of the pendant fluorosulphonic groups $-\text{OCF}_2\text{CF}_2\text{SO}_2\text{F}$. (col. 3 line 63 to col. 4 line 23, col. 4 line 29 to col. 5 line 21, col. 6 line 50-55, also applies to dependent claims 2, 3) The examiner notes that while the '539 Patent reads on the broad weight range of 500 to 5×10^5 consistent with the examiner's interpretation of the claimed weight range, the Patent also reads on the narrower preferable range of 1,000 to 50,000. The resulting composition is a perfluoropolyether additive such as in its use as a lubricant. (col. 3 line 60 et seq.)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2 and 8-16 are rejected under 35 U.S.C. 103(a) as being obvious over Marchionni et al. as applied to claim 17 above, in view of Mussell et al. (U.S. Pat. 5,882,810).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

The teachings of Marchionni et al. are discussed above

As noted above, independent claim 1 recites all the limitations of dependent claim 17 with the additional preamble recitation of "Electrolytic compositions" comprising the perfluoropolyether additive. The '539 Patent teaches all these features for the reasons detailed above.

The '539 Patent does not explicitly teach the composition to be electrolytic. However, Mussell et al. teaches that sulfonic fluoropolymers (such as that employed by the '539 Patent) are suitable for use in the preparation of a catalyst ink applied to a solid polymer electrolyte of a MEA of a fuel cell. (col. 2 line 54 et seq., col. 5 line 13-32) Of note, a fuel cell is an electrochemical system. (applies to dependent claims 15, 16) Thus, the skilled artisan would find obvious to employ the sulfonic fluoropolymer composition disclosed in the '539 Patent in an electrolytic application such as a catalyst ink of a fuel cell MEA. The motivation for such a modification would be to employ the sulfonic fluoropolymer in an ionic conductivity field or as a catalyst or catalyst support, both applications as disclosed by the '539 Patent in column 6 line 60-65 and column 7 line 10-16.

As to dependent claim 8 drawn to the concentration of the perfluoropolyether additive, absent of unexpected results it is asserted that this is an optimizable parameter for a result-effective variable. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) For example, the skilled artisan would find obvious to optimize the concentration of the additive so that the ionomer is "preferably present in an amount, based on the weight of the composition, of at least 0.5 percent but preferably no more than about 5 percent". (col. 5 line 58-61)

As to dependent claims 9-12, the limitations drawn to the particulars of a matrix material in which the ionic species is dissolved in has not been given patentable weight, as this feature is outside the scope of the claimed electrolytic composition. Of note, however, Mussell et al. teaches that the ionic species are dispersed in a matrix material such as the solid polymer electrolyte of the fuel cell. (col. 2 line 55-57)

Art Unit: 1745

Dependent claim 13 recites that the perfluoropolyether additive of formula (I) is obtainable by conversion of the fluorosulphonyl groups $-\text{SO}_2\text{F}$ into $-\text{SO}_3\text{M}$ groups. This claim language does not requisitely require the claimed conversion step, rather, it merely states that the final product is *obtainable* by this step and does not preclude other method steps from producing the final product. Since it is not requisitely part of the formation of the final product, it has not been given patentable weight as the limitation does not give breadth or scope to the product claim. The claimed product appears to be the same or similar to the prior art product insofar as being a perfluoropolyether additive of formula (I) for the reasons set forth above. Alternatively, in the event that any differences can be shown by the product of dependent claim 13, such differences would have been obvious to the skilled artisan as a routine modification of the product absent of a showing of unexpected results. *In re Thorpe*, 227 USPQ 964 (Fed. Cir. 1985). This scope of interpretation notwithstanding, the examiner notes that the '539 Patent teaches "conversion in ionic form of the pendent [sp] fluorosulphonic groups". (col. 6 line 50-59)

With respect to dependent claim 14, the perfluoroolefins are tetrafluoroethylene and/or perfluoropropene. (col. 3 line 28-29)

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

Art Unit: 1745

provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 2 and 8-17 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 and 14-16 of U.S. Pat. 6,403,539 B1 to Marchionni et al., in view of Mussell et al. (U.S. Pat. 5,882,810).

The '539 Patent, with specific reference to independent claim 1 thereof, recites the instant formula (I) with d, e, and f being integers, with the units being statistically distributed along the chain within the claimed average molecular weight, with T being an end group such as $-\text{CF}_2\text{X}$ ($\text{X} = \text{F}, \text{CF}_3, \text{Cl}$), *inter alia*. The patented composition reads on the claimed "additive" to the extent that a lubricant may be used in a manner consistent therewith.

The '539 Patent does not recite the composition as an electrolytic composition with M^{n+} as a cation, however, Mussell et al. as discussed above teaches that sulfonic fluoropolymer compositions are suitable for use in the preparation of a catalyst ink, with M being an alkali metal in salt form. (*ib*, col. 5 line 44-55) Thus, the skilled artisan would find obvious to employ the sulfonic fluoropolymer composition of the '539 Patent in an electrolytic application such as a catalyst ink of a fuel cell MEA, motivation for such a modification found in the '539 Patent itself. (col. 6 line 60-65, col. 7 line 10-16)

The examiner notes that while the '539 Patent recites a terminal " $-(\text{O})_h$ " group adjacent the rightmost "T" group, the claim defines subunit "h" as an integer which, as the skilled artisan would appreciate, can be a zero value. Claim 1 of the '539 Patent is given its broadest

Art Unit: 1745

reasonable interpretation wherein "h" for the $-(O)_h$ group equals zero and therefore essentially absent from the claimed structure.

Allowable Subject Matter

Claims 3-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record and to the examiner's knowledge do not teach or render obvious the instant invention regarding the instant formula (I) further comprising an aprotic polar solvent and a conductive salt. The examiner notes that these features are precluded from being part of the instant formula (I) when used in a fuel cell application presently relied upon in the 35 U.S.C. 103(a) rejection above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian Mercado whose telephone number is (571) 272-1289. The examiner can normally be reached on Monday through Friday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1745

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

jam


CAROL CHANEY
PRIMARY EXAMINER